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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,864	09/29/2003	Ralph Kurt	081468-0306164	8185

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EXAMINER	
CHACKO DAVIS, DABORAH	
ART UNIT	**PAPER NUMBER**
1756	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/18/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/671,864	KURT ET AL.	
	Examiner	Art Unit	
	Daborah Chacko-Davis	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 4-6, 8, 10-20, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,225,032 (Hasegawa et al., herein after referred to as Hasegawa) in view of Journal of Crystal growth 222 (2001) 452-458 (McGinnis et al, herein after referred to as McGinnis).

Hasegawa, in the abstract, in col 3, lines 60-67, in col 4, lines 1-67, in col 5, lines 58-67, in col 6, lines 12-67, in col 7, lines 1-13, and lines 38-67, in col 8, lines 1-24, in col 11, lines 10-39, in col 12, lines 4-19, in figure 2, discloses a lithographic system comprising a light source that provides a laser beam (a radiation system), a support (driving device) that supports the mask, a substrate table (reference 18, stage) that supports the wafer, an irradiation source that irradiates a resin blank (resist coated substrate) through a mask, wherein the laser beam irradiates gaseous molecules of tetrafluoromethane (positioned near the discharge port) in the chamber (the apparatus contains the composition), and gas is introduced via ports so as to flow in the path of the laser beam through the space in the laser processing apparatus i.e., the space or portion between the light source and the wafer that includes at least a projection optical system (reference 15), and a laser oscillator; the CF_4 gases are irradiated with ArF laser

(EUV source, the activating device) so as to activate the fluorine containing substance, and forms fluorine in the space (processing part) (claims 1, 4, 11-17, and 19-20). Hasegawa, in col 11, lines 64-67, discloses that gases such as rare gases (inert gases) are introduced into the apparatus via laser oscillator (claim 2). Hasegawa, in col 9, lines 9-60, discloses that the fluorine-containing compound is encapsulated in a microporous media (sponge) (claim 18).

The difference between the claims and Hasegawa is that Hasegawa does not disclose that the composition is a compound that includes one or more nitrogen atoms (claim 8). Hasegawa does not disclose that the one or more compounds includes one or more nitrogen hydrides (claim 5). Hasegawa does not disclose that the one or more compounds includes at least one of ammonia, diazine, hydrazine, and salts thereof (claim 6). Hasegawa does not disclose that the composition includes one of the gases recited in claim 10.

McGinnis, on page 452-453, discloses that the ammonia flux is introduced into the plasma atmosphere, i.e., a composition that includes one or more nitrogen atom, and is a nitrogen hydride, and includes upon dissociation due to irradiation with plasma hydrogen atoms and nitrogen atoms, prior to exposing the substrate.

Therefore, it would be obvious to a skilled artisan to modify Hasegawa by introducing the plasma atmosphere with ammonia because McGinnis, in the abstract, discloses that the ammonia flux introduced into the plasma beam resulted in the inhibition of surface roughening and produced a relatively smooth substrate surface.

3. Claim 9, is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,225,032 (Hasegawa et al., herein after referred to as Hasegawa) in view of Journal of Crystal growth 222 (2001) 452-458 (McGinnis et al, herein after referred to as McGinnis) as applied to claims 1-2, 4-6, 8, and 10-20, above and further in view of U. S. Patent No. 6,252,648 (Hase et al., hereinafter referred to as Hase).

Hasegawa in view of McGinnis is discussed in paragraph no. 2.

The difference between the claims and Hasegawa in view of McGinnis is that Hasegawa in view of McGinnis does not disclose that the composition includes nitrogen dioxide (claim 9).

Hase, in col 4, lines 1-60, discloses that the oxygen and nitrogen is mixed in the projection system and impinged with a laser light treatment that inherently produces oxides including oxides of nitrogen (nitrogen dioxide).

Therefore, it would be obvious to a skilled artisan to modify Hasegawa in view of McGinnis by purging nitrogen and oxygen via the illumination system (projection system) as suggested by Hase because Hase, in col 4, lines 38-64, discloses that introducing nitrogen with small controlled amounts of oxygen enables the formation of ozone which in turn oxidizes any organic compounds deposited on optical elements and thus performs ozone cleaning of optical elements, also enabling cleaning during an actual operation of the exposure apparatus.

4. Claim 7, is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,225,032 (Hasegawa et al., herein after referred to as Hasegawa) in view of Journal of Crystal growth 222 (2001) 452-458 (McGinnis et al, herein after referred to as

McGinnis) as applied to claims 1-2, 4-6, 8, and 10-20, above and further in view of U. S. Patent No. 5,320,707 (Kanekiyo et al, hereinafter referred to as Kanekiyo).

Hasegawa in view of McGinnis is discussed in paragraph no. 2.

The difference between the claims and Hasegawa in view of McGinnis is that Hasegawa in view of McGinnis does not disclose that the one or more compounds include nitric acid (claim 7).

Kanekiyo, in col 23, lines 65-68, discloses that the nitric acid is introduced into the plasma to perform passivation processing on the laminate layers.

Therefore, it would be obvious to a skilled artisan to modify Hasegawa in view of McGinnis by introducing the plasma atmosphere with nitric acid because Kanekiyo, in col 23, lines 65-68, and in col 24, lines 1-2, discloses that nitric acid passivation enables the removal of residues on the laminate layer prior to development (washing processing).

Response to Arguments

5. Applicant's arguments, see Remarks, filed September 11, 2006, with respect to the 102 rejections of Hase et al., and Hasegawa et al., have been fully considered and are persuasive. The 102 rejections of Hase et al., and Hasegawa et al., made in the previous office action (paper no. 0516) have been withdrawn. Applicant's arguments with respect to claims 1, 2, and 4-20, have been considered but are moot in view of the new ground(s) of rejection.

A) Applicants argue that Hasegawa et al., does not disclose one or more compounds including one or more nitrogen atoms, and one or more atoms selected form hydrogen, oxygen and halogen.

Hasegawa et al., in col 11, lines 64-67, and in col 12, lines 1-9, discloses that the gases introduced via the illumination beam (laser beam) includes halogens and rare gases. Hasegawa et al., is not depended upon to disclose introducing a compound that includes one or more nitrogen atoms. McGinnis is depended upon to disclose compounds that include one or more nitrogen atoms.

B) Applicants argue that Hasegawa et al., does not disclose a space in which gaseous molecules are created include a portion of a radiation system either the laser or the projection optical system.

Hasegawa, in col 11, lines 64-67, in col 12, lines 1-19, discloses that the gaseous molecules are introduced in the illumination system (laser oscillator), which is part of the radiation system.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

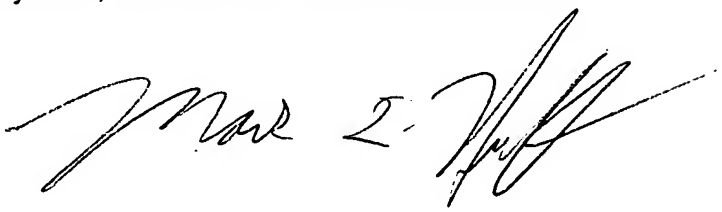
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daborah Chacko-Davis whose telephone number is (571) 272-1380. The examiner can normally be reached on M-F 9:30 - 6:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dcd

November 22, 2006.



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